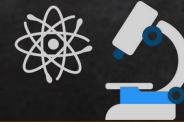


March 2023 / Vol. 27

STEAM NEWSLETTER

THE OFFICIAL NEWSLETTER FOR THE ILLINOIS DEPARTMENT OF
INNOVATION & TECHNOLOGY (DoIT) STEAM EDUCATION GROUP



Celebrate Women in STEAM during Women's History Month

According to [Women's History Month](#), March has been observed as "Women's History Month" since 1987 to "celebrate the contributions women have made to the United States and recognize the specific achievements women have made over the course of American history in a variety of fields." [The National Women's History Alliance](#) has announced the theme for 2023 as "Celebrating Women Who Tell Our Stories."



According to the American Association of University Women ([AAUW](#)), "Although women make up nearly half of all employees in the U.S. economy, they hold only 28% of STEM jobs." In computing and engineering fields, "they make up 25.2% and 16.5% of workers, respectively."

Women of color encounter more challenges in the STEM labor market, "accounting for only 2% of engineers." Furthermore, "[members of the St. Louis Fed's VIEW \(Valuing, Inspiring, Empowering Women\) employee resource group](#) learned that the number of women in STEAM was decreasing, and a high percentage of women were leaving their chosen STEAM career after about five years." Representation in STEAM fields need to reflect our society. This volume of the newsletter provides resources that help amplify women's voices in STEAM. We encourage you to explore women's stories in order to help promote gender equity in STEAM education domains.

Let off some STEAM with these fun activities!

◇ K - 4

[NASA | Explore Mars: A Mars Rover Game](#)

◇ 5 - 8

[NOAA | Boat Building Challenge](#)

◇ 9 - 12

[NASA-JPL | Think Green - Utilizing Renewable Solar Energy](#)

Educator's Corner

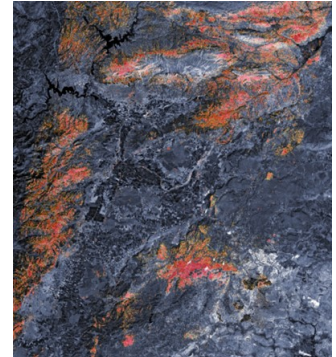
STEAM resources for in-person, hybrid, remote learning, and professional development

- [Aerospace | Classroom Resources for Teachers](#)
- [DRSC | Feed the Birds](#)
- [University of Utah Learn. Genetics | Cell Size and Scale](#)
- [MATHCOUNTS | Snow Water Equivalence](#)
- [National Gallery of Art | Women and Art](#)
- [NASA 4-H Virtual Science Sessions](#)
- [NASA | NASA's Space Jam \(Coding\)](#)
- [NASA | What Type of Engineering is Right for You?](#)
- [NOAA | Climate Resilience in Your Community Activity Book](#)
- [Resource Guide for Black and African American Students in STEM](#)
- [The Lawrence | DIY Human Body](#)
- [AAUW | Fast Facts: Early Barriers to Girls & Women in STEM](#)
- [hunderED | Women in STEAM](#)
- [IITEEA | 100+ Activities to Bring STEM to Life](#)
- [NOAA | Women in Science Profiles](#)
- [NASA | Summer 2023 GeneLab for High Schools Program \(Due by March 20\)](#)

NEWS & EVENTS

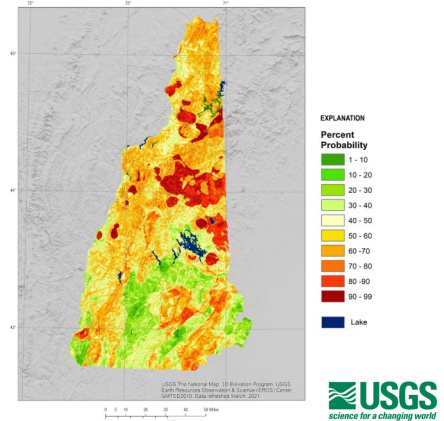
[NASA's Satellites Help with Turkey, Syria Earthquake Response](#)

“NASA has confirmed that groups in Turkey have been sent [FINDER](#) units -- a NASA spinoff technology that can detect people trapped under rubble -- from SpecOps Group Inc. of Sarasota, Florida. Short for Finding Individuals for Disaster Emergency Response, the units were on the way as of Feb. 12. NASA's Jet Propulsion Laboratory in California, worked with the Department of Homeland Security to construct the original prototypes before licensing them to SpecOps.”



[New Maps Show the Probability for Radon and Uranium in New Hampshire's Groundwater](#)

“More than half of New Hampshire is underlain by groundwater that has a 50% or higher probability of having elevated levels of radon, according to a recent study by the U.S. Geological Survey. The new USGS research also finds that a small portion of the state is underlain by groundwater with elevated concentrations of uranium.”



[Phys.org: Eating one wild fish same as month of drinking tainted water: study](#)

“Eating one freshwater fish caught in a river or lake in the United States is the equivalent of drinking a month's worth of water contaminated with toxic ‘forever chemicals’, new research said on Tuesday.”



NEWS & EVENTS Cont.

Wed. March 1 | 12 pm - 1 pm | Online  Smithsonian

Youth In Action: Digital Futures for Women

“April Armijo (Navajo/Pueblo of Acoma) and panelists Natalie Contreras (Tepehuán/Coca/P’urépecha) and Danielle Boyer (Ojibwe) discuss how young Indigenous women are forging their own paths in the tech world and creating a more inclusive environment.” **Free, but advance registration is required.**

Thu. March 2 | 9:30 am - 10:30 am | Dickson Mounds

Tot Time: All about Snow Geese



“This month’s topic is snow geese. At this time of year, there may be a 100,000 or more of these birds migrating through this area. The program will highlight what these birds eat, where they live, why they migrate, and about their role in the environment. Tots and their caretakers may enjoy fun crafts and hands-on activities.”

Tue. March 7 | 9 am - 12 pm | ROE 3, Vandalia

Robots in the Classroom




“Join us for an opportunity to get hands-on with classroom robotics. We’ll investigate how to incorporate various robots that support computer science, computational thinking, and core content in the classroom. We’ll share some brief background information on the value of robotics instruction and an introduction to each tool, then attendees are free to start programming! Test-drive different robotics tools at each station using our pre-made task cards, or get creative and try your hand at programming your own ideas. You’ll walk away with hands-on experience, links to curriculum, and ideas for implementation at your grade level.”

NEWS & EVENTS Cont.

Wed. March 8 | 11:30 am - 12:30 pm | Online

Healthy Bats, Healthy Horses, Healthy Humans

“Wildlife disease ecologist and veterinarian Dr. Alison  **Smithsonian** Peel will discuss the ecology of Hendra virus spillover and share some intriguing new research with big implications for how caring for the environment could help prevent disease spillovers in our shared planet.”

Wed. March 8 | 3:30 pm - 4:30 pm | Online

Coding in the Wild: Incorporate Interdisciplinary Coding Projects into Any Classroom!



“Join IDEA partner, CodeHS for this #WednesdayWebinar on March 8. In this session, M.R. Halloran from CodeHS will explore interdisciplinary applications of coding in science, math, art, music, humanities, and more. Course offerings range from an hour, a lesson, a unit, or up to a semester.”

Wed. March 8 | 7 pm - 7:45 pm | Online  **Smithsonian**

Artist Loie Hollowell: On Art and the Female Body

“Join artist Loie Hollowell and Hirshhorn curator Betsy Johnson to explore the ways in which art can reflect on the confluence between the spiritual and temporal nature of the female form. Hollowell makes paintings that use vibrant, emotive colors and sacred geometric shapes to reflect on the powerful nature of the human body and, more specifically, the artist’s own experience of pregnancy, birth, and postpartum motherhood. To echo the weighty curves of ancient fertility figures, Hollowell attaches spherical forms to her canvases, turning paintings into sculptural objects.”

NEWS & EVENTS Cont.

Thu. March 9 | 9 pm | Online

Lecture Webcast – Exploring Ocean Worlds With EELS (Exobiology Extant Life Surveyor)



“Ocean worlds are exciting and fascinating places to explore. The Exobiology Extant Life Surveyor (EELS) system is a serpent-like mobile instrument platform conceived to explore internal terrain structures, assess habitability, and ultimately search for evidence of life. Join members of the EELS team to learn more about this innovative technology that is adaptable to traverse ocean-world-inspired terrain and environments.”

Thu. March 9 | 5 pm - 6:30 pm | DeKalb Public Library

Teen STEM Café: Women Who Made a Difference



“In honor of Women’s History Month, learn about women scientists and leaders who have made a difference in our world.

At our monthly Teen STEM Cafés, we have short talks about STEM fields, related STEM activities and FREE Pizza from Hy-Vee! Family members are welcome.”

Thu. March 9 | Online

Celebrate Pi Day with NASA



Jet Propulsion Laboratory
California Institute of Technology

“NASA is joining schools, students and science centers across the U.S. to celebrate one of the most well known and beloved numbers: pi. Used throughout the STEM world – especially for space exploration! – pi is the number that results from dividing the circumference of any circle by its diameter. Pi can be and often is rounded to 3.14 (even though its decimals never end), which is why 3/14 has been designated National Pi Day.”

NEWS & EVENTS Cont.

**Sat. March 11 - Sat. May 13 | 2 pm - 3:30 pm |
Dickson Mounds**



Kid's Crafter-noons

“Spend an afternoon making fun arts and crafts at the Museum! A variety of supplies and materials will be available for kids to create pieces of their liking to take home. All ages are welcome with adult supervision.

This program is held on the second Saturday of each month from 2:00-3:30 p.m. beginning March 11th through May 13th. Admission is free.”

**Wed. March 15 | 6:30 pm - 8:30 pm | Two Brothers
Roundhouse, Aurora**



STEM Café: Microbrewing: The Science of Beer Flavors

“At this STEM Café, hear from Eric Scherzer, the head of quality control at Two Brothers Brewing Company, about the history of yeast, how yeast has changed alongside human culture and why yeasts produce different flavors. He’ll also discuss current genetically engineered yeasts and their flavors. Eric earned his degree in biology from Northern Illinois University in 2004 and studied brewing at the Siebel Institute in Chicago and Doemens Academy in Munich. Join us to explore the science behind beer flavors!”

Thu. March 16 | 6 pm - 7 pm | Online  Smithsonian

Observatory Night: Monitoring Air Pollution from Space

“This April, a Smithsonian and NASA-led instrument named TEMPO (Tropospheric Emissions: Monitoring of Pollution) will be launched onboard a satellite into a geostationary orbit... In this presentation, atmospheric physicist Caroline Nowlan will talk about how we measure air pollution from space and how TEMPO promises to revolutionize our understanding of the air we breathe.”

NEWS & EVENTS Cont.

Thu. March 23 | 8:30 am - 11 am | ROE 3, Vandalia
Media Literacy & Digital Tattoos: Growing Up in a Digital Age



"Join us as we dig into the challenges today's learners face as they grow up in a digital age. We'll also examine strategies for honing students' digital literacy skills, including best practices for keep themselves safe, alert, and kind online."

Sat. March 25 | 9:30 am - 2:30 pm |
Museum of Science + Industry Chicago



Women+ in STEM Career Showcase

"Girls, gender-expansive youth, and their families can learn about women's contributions to STEM, engage with hand-on activities, and connect with professionals leading the way in STEM. Professionals will be stationed throughout the Main Level of the Museum."

Eri. March 31 - Sat. April 1 | UIUC, Champaign
Grainger Engineering Open House 2023



"Students from every discipline of engineering set up exhibits to remind the general public of the role that science plays in everyday life and to show the difference that technology will make in the future. Sponsoring awards and competitions, corporations that push the boundaries of science today also make an appearance."

July 17-21 | Bloomington Junior High School
Computer Science PD Week



"CS PD Week is a new initiative of the Learning Technology Center in partnership with Bloomington-Normal STEM, CS4IL, and Discovery Partners Institute. During CS PD Week, new and experienced CS educators will engage with current CS curriculum, build community, and learn strategies for expanding access to high-quality, rigorous, and inclusive computer science learning. Registration Opens January 2023."

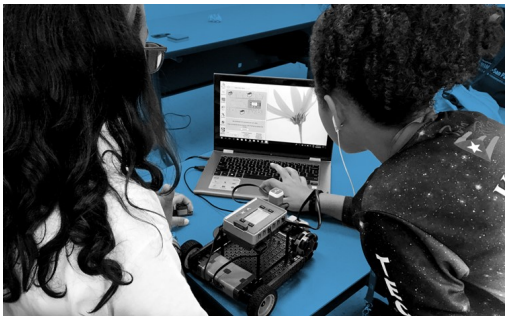
STEAM Resource Spotlight

NOAA: Hands-on science activities

National Oceanic and Atmospheric Administration provides “hands-on activities that can be done in 15-30 minutes that get students thinking about how things really work. Activities were developed by NOAA Teacher At Sea alumni and other NOAA partners and each has been tested with students of various ages.”



NCWIT AspireIT Toolkit



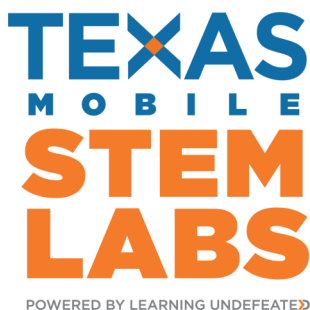
“The NCWIT AspireIT Toolkit helps anyone interested in designing engaging and inclusive computer science experiences for K-12 students, with a focus on broadening the participation of girls, women, and other underrepresented populations. The Toolkit equips facilitators with the resources and support they need to create sustainable and lasting change in their communities.”

Learning Undefeated

[Engineering Design Curriculum / Mobile Lab Activities](#)

“Learning Undefeated provides all instruction and the materials needed to complete engineering design challenges focused on brainstorming, designing, and testing during the mobile laboratory visit. All activities focus on students designing solutions to problems and allow for collaboration and exploration of the content.”

[At-home Science](#)



“STEM learning takes place in so many ways outside of the classroom. Whether you’re out of school on break or just looking for fun experiments to learn a little more about science, here are some great resources to explore. These short video experiments are designed for K-12 students to do at home, using household materials.”

STEAM Resource Spotlight

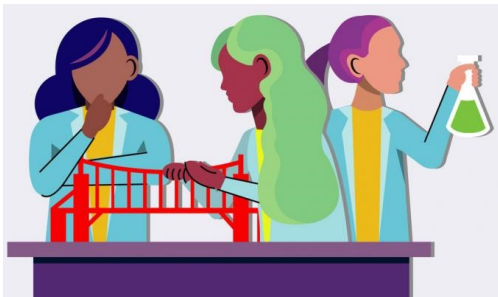
Girls4Science

“Girls 4 Science is a nonprofit organization dedicated to exposing girls in Chicago, ages 10-18 years old, to (STEM) science, technology, engineering and math.



We focus on developing skills, self-esteem, opportunity awareness, as well as relationship building that will help girls overcome barriers that may prevent them from achieving greater success in STEM careers.”

National Girls Collaborative Project: State of Girls and Women in STEM



“Created annually by NGCP, this resource presents a high-level summary of the most compelling statistics and research on the state of girls and women in STEM, focused on K-12 Education, Higher Education, and the STEM Workforce. Download the document below. We've also created a toolkit of free graphics for use in reports and on social media.”

Empower Women | Women in STEAM & STEAM for Women

“Women’s access to STEAM and their participation in national science, technology and innovation systems are necessary for us to realize the Sustainable Development Goals (SDGs) by 2030.”



Hour of Engineering



Hour of Engineering

“Engineering helps shape the world we live in. Discover the amazing world of engineering. Explore the learning modules and try engineering design challenges to learn how.” This site introduces what engineering is, how to design a products, some design challenges to try, and a teacher’s guide as reference.

The 'A' in STEAM

"Arts foster scientific success" -Dr. Temple Grandin

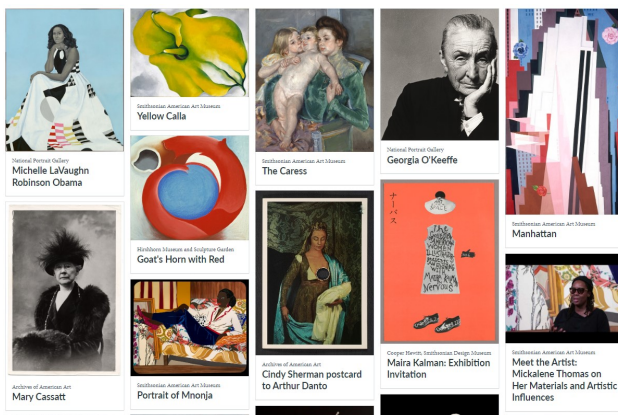
This series is dedicated to showing how art and creativity play a crucial role in our society on its own and even within the STEM fields. There's a great deal of artistry that goes into our favorite products and media we consume that make our lives easier, or at least a bit more enjoyable, and teach us valuable lessons about history.

MASTERS OF TRADITION - A Cultural Journey Across America

“Explore the [Masters of Tradition Story Map](#). Discover the rich diversity of cultures and artistic traditions that enliven our nation. Meet extraordinary artists from across the country who have received the [National Endowment for the Arts National Heritage Fellowship](#), the nation’s highest honor for excellence in the folk and traditional arts. Together they represent a remarkable portrait of America’s diverse cultural heritage.”



American Women Artists



“This is a small sampling of women artists and their works in the vast visual arts collections of the Smithsonian. [American women photographers](#) have also made their mark in the visual arts. The Smithsonian [tells the stories of women](#) within our museums and beyond our walls, critically examining the past and highlighting art and artists who might have been overlooked historically.”



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